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EXAMINER

KISHORE, GOLLAMUDI S

ART UNIT

PAPER NUMBER

1615

DATE MAILED: 05/01/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/330,215

Applicant(s)

Porta

Examiner

Gollamudi Kishore

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE three MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136 (a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on Feb 19, 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-12 and 19-22 is/are pending in the application.
- 4a) Of the above, claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-12 and 19-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claims \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some\* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\*See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s). \_\_\_\_\_ 6) ☐ Other:

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### **DETAILED ACTION**

**The request for the extension of time, filing under 1.114 and the preliminary response all filed on 2-19-03 are acknowledged.**

**Claims included in the prosecution are 1-12 and 19-22.**

#### ***Claim Rejections - 35 USC § 112***

- 1. The following is a quotation of the second paragraph of 35 U.S.C. 112:**

**The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.**

- 2. Claims 10-12 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.**

**‘cationic surfactant’ in claim 10, ‘surfactant’ in claim 11 and ‘active principle’ in claim 12 lack an antecedent basis.**

#### ***Claim Rejections - 35 USC § 102***

- 3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:**

**A person shall be entitled to a patent unless -**

**(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.**

- 4. Claims 1-12, 19 and 22 are rejected under 35 U.S.C. 102(b) as being anticipated by Gursoy (Pharmazie, 1993) of record.**

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Gursoy discloses cationic liposomes containing defibroride in claimed amounts and the composition's anti-inflammatory activity. The liposomes contain tocopherol in addition(note pages 549 and 550). The release of prostacyclin inside the host is deemed to be an inherent property of defibroride.

*Claim Rejections - 35 U.S.C. § 103*

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 10-12, 19 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gursoy cited above.

Gursoy does not teach entire claimed range of the components. However, in view of the basic teachings and the guidance provided by Gursoy, it is deemed obvious to one of ordinary skill in the art to manipulate the ratios with the expectation of obtaining the best possible results. Gursoy teaches that the anti-thrombotic activity of defibroride is known. Therefore, it would have been obvious to one of ordinary skill in the art to use the compositions for anti-thrombotic activity with a reasonable expectation of success as that observed for inflammation. Gursoy's studies were conducted on animals. It is to be noted that the term, 'patient' includes animals. Although Gursoy does not teach humans as the

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patients, it is deemed obvious to one of ordinary skill in the art to use the composition on humans since animal studies are extrapolated to humans in the field of medicine.

7. Claims 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gursoy cited above, in view of applicant's statements of prior art or vice versa.

The teachings of Gursoy have been discussed above. What is lacking in Gursoy are the teachings of the usefulness of the composition for the claimed disease conditions.

Applicant on page 4 of the specification indicates the activity of defibroride against the claimed diseases. Therefore, it would have been obvious to one of ordinary skill in the art to use the compositions for anti-thrombotic activity or treatment of hypertension with a reasonable expectation of success as that observed for inflammation. Alternately, the use of Gursoy's liposomes for the art known defibroride would have been obvious to one of ordinary skill in the art because of the advantages taught by Gursoy.

8. Claims 1-12 and 19-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over applicant's statements of prior art in combination with Litzinger (BBA, 1996) of record by itself or in further combination with Maccarone (BBRC, 1992), Eastman (Human Gene Therapy, 1997) individually or in combination.

Applicant indicates on pages 3-7 of the specification that instant polynucleotides are known for their function.

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**Litzinger while disclosing formulations containing cationic liposomes and their complexes with polynucleotides teaches that oligonucleotides have the inability to efficiently traverse through cellular membranes and hence complexation with cationic liposomes (note the abstract and page 140).**

**Maccarone teaches that DNA when complexed with cationic liposomes are able to transfect protoplasts (note the abstract).**

**Similarly, Eastman teaches that the complex prepared by the addition of cationic liposomes and DNA has an efficient transfection ability (note the abstract and Materials and methods).**

**The use of cationic liposomes for the delivery of art known polynucleotides would have been obvious to one of ordinary skill in the art in view of Litzinger's teachings that oligonucleotides do not have the ability to cross cellular membrane, but are able to efficiently transfect when complexed with cationic liposomes as also shown by Maccarone and Eastman.**

**Applicant's arguments have been fully considered, but are not found to be persuasive. Applicant appear to admit that the references teach or suggest the use of cationic liposomes for the delivery of nucleic acids, but argues that the cited references not only state that cationic liposomes are required in order to achieve effective transfection, but as seen in Eastman, these vectors require large amounts of material for effective delivery. Therefore, according to applicant, the references cited by the examiner are not relevant to**

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**the present invention because these references state that complexation is required for oligonucleotides to achieve effective pharmacological activity (i.e., transfection ability).**

**Applicant further argues that the cited references teach away and this is supported by the fact that the claimed polydeoxyribonucleotides obtained by depolymerization of nucleic acids are effective drugs even without complexation. These arguments are not found to be persuasive. First of all, instant claims do not recite any specific amounts or ranges for the nucleotides. Secondly, applicant based on 'Pharmaceutique OMS' reference previously argued (paper NO. 21) that this reference shows that Defibroride does not have mutagenic potential in the bacterial system and therefore, does not possess transfection capability.**

**Irrespective of this, the examiner points out that if the cationic liposomes have the ability to increase the transfection of the molecules which normally do not enter cells enter the cells, one of ordinary skill in the art would reasonably expect to increase the transfection ability of the claimed oligonucleotides by liposomes. Furthermore, it is well known in the art that liposomes reduce the toxicity of the drugs by reducing the quantity of the drugs needed.**

**This is evident from the Gursoy which applicant himself cites (Gursoy is prior art).**

**Therefore, this is not an unexpected finding.**

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9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to *G.S. Kishore* whose telephone number is (703) 308-2440.

The examiner can normally be reached on Monday-Thursday from 6:30 A.M. to 4:00 P.M. The examiner can also be reached on alternate Fridays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, T.K. Page, can be reached on (703)308-2927. The fax phone number for this Group is (703)305-3592.

Communications via Internet e-mail regarding this application, other than those under 35 U.S.C. 132 or which otherwise require a signature, may be used by the applicant and should be addressed to [thurman.page@uspto.gov].

All Internet e-mail communications will be made of record in the application file. PTO employees do not engage in Internet communications where there exists a possibility that sensitive information could be identified or exchanged unless the record includes a properly signed express waiver of the confidentiality requirements of 35 U.S.C. 122. This is more clearly set forth in the Interim Internet Usage Policy published in the Official Gazette of the Patent and Trademark on February 25, 1997 at 1195 OG 89.



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**Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703)308-1235.**



**Gollamudi S. Kishore, Ph. D**

**Primary Examiner**

**Group 1600**

*gsk*

**April 29, 2003**